

104(e) Response Update

Portland General Electric – Rivergate North and South Substations (August 24, 2012)

.EPA Question	Response	Records/Information Available
Section 1.0 - Respondent Information		
1. Provide the full legal, registered name and mailing address of Respondent.	Portland General Electric Company 121 SW Salmon Street Portland, OR 97204	
2. For each person answering these questions on behalf of Respondent, provide:		
Site Operator: Portland General Electric		
a. full name;	Arya Behbehani	
b. title;	Manager, Environmental Services	
c. business address; and	121 SW Salmon Street m/s 3WTCBR05 Portland, OR 97204	
d. business telephone number, electronic mail address, and FAX machine number.	Business Telephone Number: 503-464-8141 Electronic Mail Address: Arya.Behbehani@pgn.com Fax Number: 503-464-8527	
Site Consultant: URS Corporation		
a. full name;	David Weatherby, RG; Anne Gire	
b. title;	Senior Project Manager; Environmental Scientist	
c. business address: and	111 SW Columbia, Suite 1500 Portland, OR 97225-5850	
d. business telephone number, electronic mail address, and FAX machine number.	Business Telephone Number: 503-222-7200 Electronic Mail Addresses: David.Weatherby@urs.com; Anne.Gire@urs.com Fax Number: 503-222-4292	
3. If Respondent wishes to designate an individual for all future correspondence concerning this Site, please indicate here by providing that individual's name, address, telephone number, fax number, and, if available, electronic mail address.	Arya Behbehani Portland General Electric Manager, Environmental Services 121 SW Salmon Street - 3WTCBR05 Portland, OR 97204 Tel: 503-464-8141 Fax: 503-464-8527 Electronic Mail Address: Arya.Behbehani@pgn.com	

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Section 2.0 - Owner/Operator Information		
<p>11. Identify all prior operators of the Property, including lessors, you are aware of for each Property identified in response to Question 4 above. For each such operator, further identify if known:</p> <p>a. the dates of operation;</p> <p>b. the nature of prior operations at the Property;</p> <p>c. all evidence that they controlled access to the Property; and</p> <p>d. all evidence that a hazardous substance, pollutant, or contaminant was released or threatened to be released at or from the Property during the period that they were operating the Property</p>	<p>Based on a review of historic aerial photographs and maps, buildings were constructed on the parcels as part of the Oregon Shipbuilding Corporation's operation of the shipyard. These buildings adjoined the "barracks" area and included a theater and gym, mess hall, clinic, recreation, and fire station building. A water tank is depicted on the undeveloped parcel nearest Burgard road. Based on a review of available aerial photographs, the barracks and associated buildings were demolished and removed by 1956. See Electrical Equipment Photo Zooms Compressed.pdf.</p>	<p>See Attachment Q13_Electrical Equipment Photo Zooms Compressed.pdf</p>
Section 3.0 - Description of Each Property		
<p>13. Provide the following information about each Property identified in response to Question 4:</p>		
<p>b. location of underground utilities (telephone, electrical, sewer, water main, etc.);</p>	<p>The attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf) describes additional assessments of onsite utilities and drainage structures that were undertaken in 2011 at the Rivergate Substations. These assessments concluded that all stormwater from the Rivergate North Substation infiltrates into the ground, either within the substation or in the low-lying vegetated areas immediately surrounding it.</p> <p>During heavy rain events, some stormwater runoff from the Rivergate South Substation enters a catch basin on the east side of Time Oil Road. To the best of PGE's knowledge, after reasonable inquiry, this catch basin connects to a non-municipal storm drainage system serving the former Oregon Shipyard area. PGE conducted dye testing in order to determine the discharge point of this catch basin, as described in the attached document (Q19_CB-1 Assessment Final.pdf). Based on the results of this assessment, water ponds within this stormwater system and is likely to infiltrate into the ground to some extent. It required 14,000 gallons of water input to the catch basin, and four hours, to induce outflow that included dye from the outfall known as Schnitzer Outfall 18.</p>	<p>See Question 19 Attachment Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf Q19_CB-1 Assessment Final.pdf</p>

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d. surface structures (e.g., buildings, tanks, pipelines, etc.);	<p><i>Equipment:</i></p> <ul style="list-style-type: none"> Oil-Water Separator – 1 	
g. treatment or control devices (e.g., surface water, air, groundwater, Resource Conservation and Recovery Act (RCRA), Transfer, Storage, or Disposal (TSD), etc.);	<p><u>Rivergate North Substation</u></p> <p>The attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf) describes additional assessments of onsite utilities and drainage structures at the Rivergate North and South Substations undertaken by PGE in 2011. Dye testing of the Rivergate North control house sump showed that the sump discharges to the surface west of the substation, where any water discharged infiltrates in a large vegetated swale.</p> <p>A gravel berm surrounds the substation to encourage infiltration of stormwater into the gravel surface. This berm is reinforced with a raised curb made from 2 x 12" wood planks that line the perimeter of the substation, except for the driveway entrances.</p> <p>Beneath the transformer area of the substation, impermeable liner is installed beneath the gravel surface to prevent stormwater from directly infiltrating the ground near this equipment, and to prevent any infiltration in the event of leaks or spills related to the transformers. Perforated PVC pipe above the impermeable liner directs stormwater to an oil-water separator for treatment. Treated stormwater is then allowed to infiltrate via a perforated pipe in an unlined drainage trench in the substation's northeast corner.</p>	<p>See Question 19 Attachment Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf</p>
i. stormwater drainage system, and sanitary sewer system, past and present, including septic tank(s) and where, when and how such systems are emptied and maintained;	<p>To the best of PGE's knowledge, after reasonable inquiry (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf), most stormwater from the Rivergate South substation infiltrates into the ground onsite. During heavy rain events some stormwater enters a catch basin connected to a non-municipal drainage system serving the former Oregon Shipyards area, as described further below.</p> <p><u>Rivergate North</u></p> <p>The attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf) describes additional assessments of onsite utilities and drainage structures at the Rivergate North Substation undertaken by PGE in 2011. During heavy rain events in January and February 2011, PGE confirmed that stormwater infiltrates into the surface gravel on site, with some returning to the surface in seeps along the east and west margins of the site, where it flows overland for a few feet before re-infiltrating at the base of the fill slope around the substation. Based on the additional assessments performed, stormwater originating from the Rivergate North substation infiltrates on-site and does not have the potential to enter nearby stormwater conveyances.</p> <p><u>Rivergate South Substation</u></p> <p>The attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf) describes additional assessments of onsite utilities and drainage structures at the Rivergate South Substation undertaken by PGE in 2011. The substation surface has a 1:100 grade toward the east and west, with a crown in the approximate center of the site running north-south. During heavy storm events, some runoff from the west half of the substation</p>	<p>See Question 13 Attachments Q13_Site History ODEQ200156865.pdf Q13_1967 Sewer Revised ODEQ200005381.pdf</p> <p>Also see Question 19 Attachments Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf Q19_CB-1 Assessment Final.pdf</p>

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	<p>enters a catch basin on the east side of Time Oil Road. Dye testing of this catch basin indicates it eventually discharges to Schnitzer Outfall 18 (Q19_CB-1 Assessment Final.pdf). Thick sediment deposits were observed in the pipe, and the water appears to pool within the wider drainage system. Owing to the volume of water that appeared to be pooled within the outlet pipe, an additional significant volume of water was used to induce flow in the pipe. Based on the 2011 Stormwater Assessment, sediment entrained in the stormwater is likely to settle out before eventual discharge, and some water may infiltrate into the ground from leaks or breaks in this non-municipal system.</p> <p>To the best of PGE's knowledge, after reasonable inquiry, this drainage system was likely to have been constructed in the 1940s as part of the Oregon Shipyards development. Maps of the system from the 1940s (Q13_Site History ODEQ200156865.pdf) indicate that the catch basin was likely originally designed to discharge stormwater to the north into a wetland area connected to the Columbia Slough system. Dye testing performed in 2011 indicates that it does not discharge to this point currently, but eventually discharges to the west from Schnitzer Outfall 18.</p> <p>A 1967 assessment of this system performed by Multnomah County (Q13_1967 Sewer Revised ODEQ200005381.pdf) states that (prior to the development of the Rivergate Substations) the shipyard sewer system was originally constructed as a combined sewer with direct discharge to the River of all inputs. The document includes proposed plans to separate this sewer so that sanitary and industrial discharges would connect to the City of Portland municipal sewer located in North Lombard Avenue. The document notes that the 1940s sewer system was already in poor condition in 1967.</p> <p>To the best of PGE's knowledge, after reasonable inquiry, PGE has no knowledge of when or whether the original combined sewer in the area was separated and / or connected to nearby municipal lines. PGE has no knowledge of ownership or maintenance of the drainage system that is connected to the catch basin on Time Oil Road.</p>	
m. all aerial photographs of the Property in your possession.	Additional aerial photographs that were available are attached.	See Attachment Q13_Electrical Equipment Photo Zooms Compressed.pdf
15. For each Property, provide all reports, information or data you have related to soil, water (ground and surface), or air quality and geology/hydrogeology at and about each Property. Provide copies of all documents containing such data and information, including both past and current aerial photographs as well as documents	<p><u>Rivergate North Substation:</u></p> <ul style="list-style-type: none"> 12-16 May 2011 – Surface soil, concrete chips, and wipe samples were collected from former capacitor locations at the Rivergate North Substation for PCB analysis, as described fully in the attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf). Of 14 surface soil samples taken from the former capacitor area, ten showed non-detect. The four samples above method detection limits (MDLs) ranged between 0.039 and 0.332 mg/kg total PCBs. All wipe samples from current equipment showed non-detect levels of PCBs. The two concrete chip samples showed 3.77 and 40.4 mg/kg Aroclor 1248. 	See Question 19 Attachments Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf

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containing analysis or interpretation of such data.	<p><u>Rivergate South Substation:</u></p> <ul style="list-style-type: none"> 28 April 2010 and 19 May 2011 – Samples of on-site surface soil (2010) and sediment from stormwater pathways (2011) both up and down-gradient of the Rivergate South Substation were collected for PCB analysis, as described fully in the attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf). Of four surface soil samples taken from the substation, one showed non-detect. The three samples above MDLs ranged between 0.221 and 24.2 mg/kg Aroclor 1254. Sediment taken from seeps and a stormwater rill on the margins of the substation showed total PCBs between 0.031 and 0.377 mg/kg. The sediment sample collected from the catch basin outflow pipe showed total PCB of 0.031 mg/kg. A sample collected from the margin of Time Oil Road (upslope from the location where stormwater runoff from Time Oil Road commingles with runoff from the substation) showed total PCBs of 0.748 mg/kg. 	
18. For each Property, provide the following information regarding any current or former sewer or storm sewer lines or combined sanitary/storm sewer lines, drains, ditches, or tributaries discharging into the Willamette River:		
a. the location and nature of each sewer line, drain, ditch, or tributary;	<p>To the best of PGE's knowledge, after reasonable inquiry, most stormwater at the Rivergate Substations infiltrates through the gravel surface or in immediately adjacent low-lying vegetated areas. The attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf) describes additional assessments of onsite utilities and drainage structures at the Rivergate North and South Substations undertaken by PGE in 2011. Figure 2 in this report includes a map depicting site drainage, infiltration areas, and flow diagrams.</p> <p>The substation surfaces have a 1:100 grade toward the east and west with a crown in the approximate center of the sites that runs north-south. During heavy storm events, some runoff from the west half of the Rivergate South substation enters a catch basin on the east side of Time Oil Road. Dye testing of this catch basin indicates it eventually discharges to Schnitzer Outfall 18 (Q19_CB-1 Assessment Final.pdf). Water appears to be pool within this wider drainage system, to the west of Time Oil Road.</p>	<p>See also Question 19 Attachments Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf Q19_CB-1 Assessment Final.pdf</p>
b. the date of construction of each sewer line, drain, ditch, or tributary;	<p>To the best of PGE's knowledge, after reasonable inquiry, the nearby drainage system connecting to Time Oil Road was likely to have been constructed in the 1940s as part of the Oregon Shipyards development. Maps of the system from the 1940s (Q13_Site History ODEQ200156865.pdf) indicate that the closest catch basin was originally designed to discharge to the north into a wetland area connected to the Columbia Slough system. Dye testing performed in 2011 indicates that it does not discharge to this point currently, but eventually discharges to the west from Schnitzer Outfall 18.</p>	<p>See Question 13 Attachments Q13_Site History ODEQ200156865.pdf Q13_1967 Sewer Revised ODEQ200005381.pdf</p>

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	A 1967 assessment of this system performed by Multnomah County (Q13_1967 Sewer Revised ODEQ200005381.pdf) states that (prior to the development of the Rivergate Substations) the drainage system was originally constructed as a combined sewer with direct discharge to the River of all inputs. The document includes proposed plans to separate this sewer so that sanitary and industrial discharges would connect to the City of Portland municipal sewer system located in North Lombard Avenue. The document notes that the 1940s sewer system was already in poor condition in 1967.	
c. whether each sewer line, or drain was ever connected to a main trunk line;	To the best of PGE's knowledge, after reasonable inquiry, PGE does not know whether the nearby non-municipal drainage system was ever connected to a main trunk line. Dye tests performed in 2011 indicate that the catch basin nearest to the Rivergate Substations connects to the private outfall known as Schnitzer Outfall 18.	
d. whether each sewer line, drain, ditch, or tributary drained any hazardous substance, waste, material or other process residue to the Willamette River; and	A 1967 assessment of the area drainage system performed by Multnomah County (Q13_1967 Sewer Revised ODEQ200005381.pdf) states that (prior to the development of the Rivergate Substations) the drainage system was originally constructed as a combined sewer with direct discharge to the River of all inputs. This document includes proposed plans to separate the sewer and direct industrial and sanitary waste to the City of Portland municipal sewer system in North Lombard. To the best of PGE's knowledge, after reasonable inquiry, PGE does not know when or whether this proposal was implemented.	See Question 13 Attachments Q13_1967 Sewer Revised ODEQ200005381.pdf
19. Provide copies of any stormwater or property drainage studies, including data from sampling, conducted at these Properties on stormwater, sheet flow, or surface water runoff. Also provide copies of any Stormwater Pollution Prevention, Maintenance Plans or Spill Plans developed for different operations during the Respondent's operation of each Property.	Reports detailing the additional stormwater assessments undertaken by PGE in 2011 are attached (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf and Q19_CB-1 Assessment Final.pdf).	See Question 19 Attachments Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf Q19_CB-1 Assessment Final.pdf
Section 4.0 - Respondent's Operational Activities		
71. Describe the purpose for, the date of initiation and completion, and the results of any investigations of soil, water (ground or surface), sediment, geology, and hydrology or air quality on or about	<u>Rivergate North Substation:</u> <ul style="list-style-type: none"> 12-16 May 2011 – Surface soil, concrete chips, and wipe samples were collected from former capacitor locations at the Rivergate North Substation for PCB analysis, as described fully in the attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf). Of 14 surface soil samples taken from the former capacitor area, ten showed non-detect. The four samples above method detection limits 	See Question 19 Attachments Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf

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each Property. Provide copies of all data, reports, and other documents that were generated by you or a consultant, or a federal or state regulatory agency related to the investigations that are described.	<p>(MDLs) ranged between 0.039 and 0.332 mg/kg total PCBs. All wipe samples from equipment showed non-detect levels of PCBs. The two concrete chip samples showed 3.77 and 40.4 mg/kg Aroclor 1248.</p> <p><u>Rivergate South Substation:</u></p> <ul style="list-style-type: none">4 April 2010 and 19 May 2011 – Samples of on-site surface soil and sediment from stormwater pathways both up and down-gradient of the Rivergate South Substation were collected for PCB analysis, as described fully in the attached document (Q19_Rivergate Stormwater Drainage Assessment_November to PGE.pdf). Of four surface soil samples taken from the substation (2010), one showed non-detect. The three samples above MDLs ranged between 0.221 and 24.2 mg/kg Aroclor 1254. Sediment taken from seeps and a stormwater rill on the margins of the substation (2011) showed total PCBs between 0.031 and 0.377 mg/kg. The sediment sample collected from the catch basin outflow pipe showed total PCB of 0.031 mg/kg. An upslope sediment sample collected from the margin of Time Oil Road showed total PCBs of 0.748 mg/kg.	